SPEAR

Night Vision Weapon Sight

USER'S MANUAL

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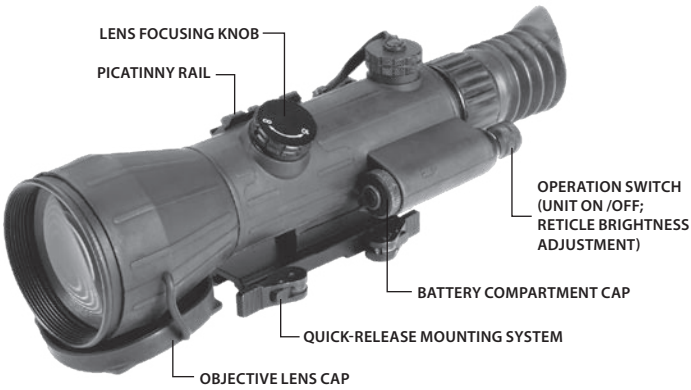
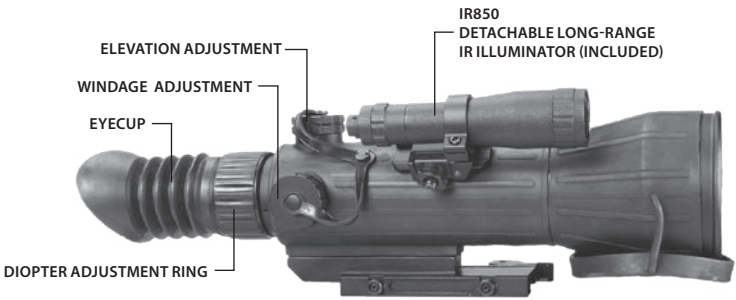
PARTS OF THE WEAPON SIGHT





IR850W
DETACHABLE WIDE ANGLE
ADJUSTABLE LONG-RANGE
IR ILLUMINATOR
PART# IAIR850IR000002
(OPTIONAL)

HARD SHIPPING/
STORAGE CASE
PART# ANHC000004
(OPTIONAL)

CAUTION:

This product contains natural rubber latex, which may cause allergic reactions! The FDA has noted an increase in the number of reported deaths that are associated with an apparent sensitivity to natural latex proteins. If you are allergic to latex, it is a good idea to learn which products contain it and strictly avoid exposure to those products.

The information provided in this manual is intended for familiarization with the product only. The contents may undergo further changes with no commitment by Armasight to notify customers of any updates.

Armasight© assumes no responsibility for any misprints or other errors that this manual may contain.

1. DESCRIPTION AND DATA

DESCRIPTION

The Armasight Spear is a high-tech, tough, and durable night vision riflescope that delivers great performance at the lowest possible cost. Featuring a high-quality Gen 2+ image intensifier tube, an adjustable, illuminated reticle, easy to use internal windage and elevation adjustments, and simple controls, the Armasight Spear will allow you to see beyond the expected in nighttime conditions.

The Armasight Spear riflescope is equipped with an armored, rubber-coated housing made from aircraft aluminum. The Spear is fitted with a double-lever quick-release mount that allows for highly accurate rail positioning, ensuring user comfort. For improved accuracy and ergonomics, the Spear features precision top wheel focus. A high-powered, long-range IR illuminator is included for long-range use.

Water-resistant, robust, and lightweight, the Armasight Spear is the perfect night vision riflescope for hunters and tactical marksmen.

FEATURES

- **4X magnification**
- **Shock protected, all-glass IR transmission multicoated optics**
- **Rubberized body**
- **Illuminated reticle with brightness adjustment**
- **Detachable long-range infrared illuminator**
- **Water and fog resistant design**
- **Quick-release mount**
- **Mounts to standard Weaver rails**
- **Water and fog-resistant**
- **Limited two-year warranty**

SPECIFICATIONS *

Generation	Gen 2+
Magnification	4x
Lens System	F:1.5, 108 mm
FOV	10°
Exit Pupil	10 mm
Eye Relief	46 mm
Range of Focus	25 m to infinity
Diopter Adjustment	-6 to +2
Controls	Direct
Infrared Illuminator	Detachable IR850
Power Supply	1 x 3V CR123A type battery **
Battery Life	up to 60 hrs
Reticle System	Red
Windage & Elewation Adjustment	1/2 MOA
Environmental Rating	Water and fog resistant
Operating Temperature	-40 to +50 °C
Storage Temperature	-50 to +70 °C
Dimensions	295x100x100 mm / 11.6”x3.9”x3.9”
Weight	1.5kg / 3.4 lbs

** Armasight© reserves the right to modify these specifications at any time without notice.*

*** Any CR123 type rechargeable batteries with voltage 3.2V can be used*

2. PREPARATIONS FOR OPERATION

WARNING:

The Spear night vision weapon sights are designed for several years of reliable service. To ensure trouble-free performance, please observe the following instructions:

- Do not activate the device in daylight unless the protective lens cover is fitted securely over the objective lens. If the device is ON, do not direct the device towards bright light sources, such as car headlights, camp fires, street lights, etc., as this will cause damage to the device.
- Do not check the device's operation in daylight unless the front lens cap is fitted securely over the lens, and even then, the device should only be ON for the few seconds it takes to establish correct operation.
- Do not open the body of the device or otherwise disassemble it.
- Avoid dropping or otherwise impacting the device.
- Do not expose the device to moisture or extreme temperatures.
- Do not touch the lenses. Clean optical parts with a clean, soft cloth, and only use professional lens cleaners designed for use with optics.
- Do not forget to remove the battery from the battery compartment if the device is to be stored for **more than 3 days**.
- Do not forget to turn the device off during periods of non-operation.

WARNING:

Consider the following information and restrictions in order to avoid damaging the device and to ensure a long service life and failure-free operation:

- Performance of the device in nighttime conditions depends on the level of ambient light in the environment. Some light (moonlight, starlight, etc.) is required for the device to provide an image.
- The level of ambient light is reduced by the presence of clouds, shade, or objects that block natural light (buildings, trees, etc.).
- The device loses its effectiveness when operated in shadowed areas.
- The effectiveness of the device is adversely affected by weather conditions such as rain, snow, sleet, and fog, as well as environmental conditions such as smoke or dust.
- The device's resolution level is reduced in environments with very low light conditions. The visibility will degrade significantly under starlight conditions, particularly in low-contrast environments such as deserts, large areas of uniform vegetation, etc.
- The device is equipped with a protection system that will automatically disable the image intensifier tube when the illuminance level stays above 40 lux for over 10 seconds.

BATTERY INSTALLATION

1) Unscrew the battery compartment cap.

2) Insert the battery into the battery compartment, following the polarity order marked on the compartment for reference. Remember that the Spear requires a single 3 Volt lithium CR123A battery.

3) Screw the battery cap back into place.

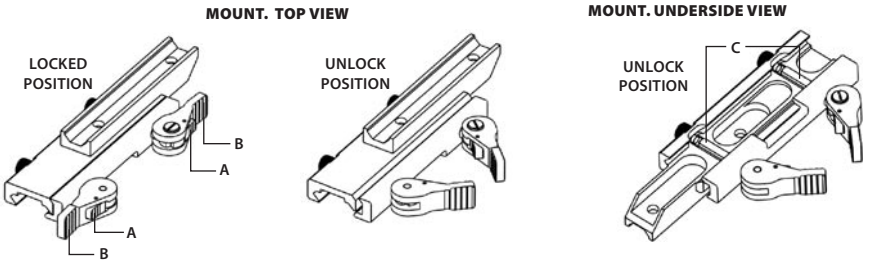
MOUNTING ON A WEAPON

WARNING:

When installing the equipment on a weapon, verify that the weapon is clear and that the safety is on before proceeding.

To install the Spear on a Picatinny/ Weaver rail, perform the following:

1. Unlock the clamping device of the Spear mount by pushing down on the lever holders (A) and unlocking the levers (B).
2. Install the Spear on the Picatinny/ Weaver rail so that the stops (C) slide into the transverse slots on the rail.
3. Fix the Spear to the rail by locking the levers (B).
4. Verify that the clamping device is firmly holding the Spear . If necessary, adjust the clamping device's lever-cam locks as detailed in Chapter "Clamping Device Adjustment".



CLAMPING DEVICE ADJUSTMENT

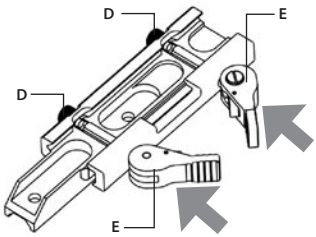
To adjust the mount's clamping device, do the following:

1. Remove the Spear from the weapon.
2. With the clamping device unlocked, push the cam (E) towards the arrow, which will cause the nut (D) to slide out of its hole.
3. To tighten/ loosen the clamping device, push down on the cam (E) and turn the nut (D) CW/ CCW respectively, in one-two increments (see note below). Much like when the cam (E) is released, backward-moving springs will cause the nut (D) to slide back into its hole.

NOTE:

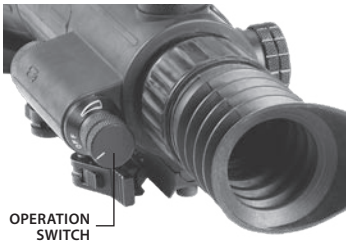
The eight-sided nuts of the mount lever-cam locks will only fit into their holes if turned in one of the discrete positions, using increments equal to 360°/8.

4. Verify that the adjusted lever-cam lock securely holds the weapon mounting rail.
5. Repeat the procedure to adjust the clamping device's second lever-cam lock.



3. OPERATION INSTRUCTIONS

CONTROLS



The Armasight Spear weapon sights feature simple, easy-to-operate controls and adjustments.

To turn on the sight, rotate the operation switch from the OFF position.

To turn off the sight, rotate the operation switch to the fixed OFF position.

To adjust the reticle brightness, do the following:

1) Turn the sight on.

2) Look into the eyepiece (you will be able to see the reticle brightness through the viewfinder). Rotate the operation switch to gradually adjust the reticle brightness until the desired level of brightness is reached.

FOCUSING YOUR DEVICE

To focus the Spear, turn the diopter ring clockwise until it stops. Then, while looking through the eyepiece, aim the sight towards an object in the distance and begin slowly rotating the diopter ring in a counterclockwise direction, until the image becomes sharp and clear.

NOTE:
If you are operating your Spear in daylight, verify that the protective lens cover is securely fitted over the objective lens **before** you begin adjusting the diopter.

You sight has the ability to focus when over both long-range and short-range distances. Focus the front lens by rotating the focusing knob until the image becomes clear.

SET-UP PROCEDURES

To check device's operation in daylight or in an illuminated room, observe the following procedures:

1) Verify that the battery is inserted into the battery compartment in accordance with the polarity markings on the body of the sight.

2) Verify that the objective lens is securely closed.

3) Without removing the protective caps, activate the unit by rotating the operation switch from OFF position. While looking through the eyepiece, observe the scene. Verify that the green light indicating correct IIT operation is on.

4) Adjust the eyepiece's diopter ring and lens focus until the image becomes clear and sharp.

5) Turn the unit off by rotating the operation switch to OFF position. The green glow will disappear from the eyepiece.

OPERATION IN NIGHTTIME CONDITIONS

CAUTION:
Avoid exposing the sight to bright light sources. Bright light emitted by fires, automobile headlights, lanterns, projectors, etc. will damage your Spear.

1) Visually estimate the illuminance level in the viewing area. Operation of the device with the objective lens cap removed is safe only when the illuminance level is less than 1 lux (at an illuminance level of 1 lux, you will barely be able to read a newspaper, even after your eyes have adapted to the dim light or darkness).

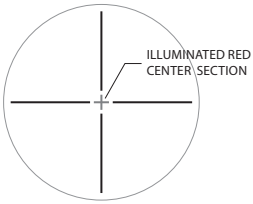
2) Remove the front lens cap.

3) Activate the unit by rotating the operation switch from OFF position. After a momentary delay, a green light indicating correct IIT operation will appear.

4) Observe the scene and focus your Spear.

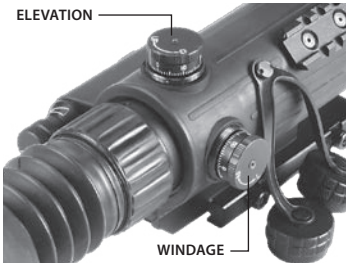
RETICLE

The Armasight Spear reticle provides a clear aiming point, even when difficult-to-see games or objects blend into the background. Posts and crosshairs appear in the center section of the field of view, but occupy a minimal portion of the image, making precise shots on even the smallest targets easy and accurate. Lit center section of crosshairs have an adjustable brightness to lead your eye directly to the center and aiming position. The result is fast precision target acquisition.



WINDAGE AND ELEVATION ADJUSTMENT

The vertical and horizontal adjustments of the Armasight Spear can be regulated by adjusting the elevation and windage turrets. You will first need to remove the dust caps. Each click indicates 1/2 of an inch at 100 yard's distance. Once the turrets stop turning, do not attempt to turn them any further, as this may damage the mechanism.



4. IR ILLUMINATOR

Infrared illuminators are used in areas where the level of light is not sufficient for the unit to generate a bright, clear image. An IR illuminator provides infrared light which, although invisible to the naked eye, can greatly enhance the performance of night vision devices. Turn on the IR850 when working in total darkness. Remember that the beam emitted by your IR illuminator will lose its brightness over long distances.

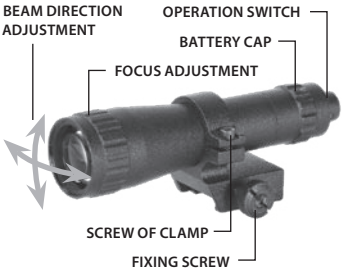
IR ILLUMINATOR INSTALLATION

The IR850 is a removable infrared illuminator that can be installed on the rail of the Spear. To install the IR illuminator on your sight, perform the following steps:

1) Loosen the fixing screw on the IR850 mount.

2) Place the IR8150 on the Picatinny rail.

3) Tighten the fixing screw.



IR ILLUMINATOR OPERATION

The Armasight IR850 runs on a single CR123A battery. To install the battery, unscrew the battery compartment cap and insert the battery in accordance with the polarity markings on the unit's body. Screw the battery compartment cap back into position.

To turn the IR850 on, rotate the operation switch from the OFF position.

To adjust the power and brightness of the beam emitted by the IR850, rotate the illuminator operation switch.

Focus the IR beam to change the field of coverage. To focus the beam, rotate the IR illuminator lens until the image becomes clear.

Adjust the IR spot position in the field of view of the NVD (night vision device) as follows:

1) Loosen the screw of the clamp on the IR illuminator mount.

2) Turn on the sight and the IR illuminator.

3) Carefully move the lens of the IR850 up and down and side to side. While looking through the eyepieces of your device, observe the IR spot position.

4) Once the IR spot is centered in the field of view, tighten the fixing screw of the clamp.

5. MAINTENANCE PROCEDURES

The Spear should always be stored in the supplied packaging, particularly in heated and ventilated rooms. To keep the device operational, please follow the instructions (below) regarding preparations preparations for storage. The battery should be stored separately from the device, and be inserted into the battery compartment **only** when the device is being prepared for use. The presence of both acids and alkalis near the device is not recommended.
While stored, your Spear should be protected from exposure to direct sunlight or extreme temperatures.

SPEAR CLEANING PROCEDURES

1) Gently remove any dirt from the sight's body using a clean, soft cloth.

2) Wipe external surfaces down (with the **exception** of optical surfaces) with a clean cloth that has been moistened with pure water.

3) Dry all wet surfaces with a different clean, dry cloth.

4) Carefully remove any dirt from the optical surfaces using a lens brush.

5) To avoid scratches, optical surfaces must be cleaned using a clean cotton swab that has been slightly dampened with pure alcohol. The glass should be wiped in circular motions starting from the center and moving out towards the edge, without touching the barrel. Change the cotton swab as soon as it becomes dirty.

CAUTION:
Only apply photographic lens cleaning tissues to the optical surfaces. Avoid damaging or leaving fingerprints on the lenses. A can of compressed air may be used to blow dust off of the lenses. **Do not** tip the can while spraying, as you may cause the propellant to freeze as it exits the can. This may damage the glass.

PREPARATIONS FOR STORAGE

When preparing your Spear for storage, perform the following steps:

1) Verify that the sights are operating in accordance with all previously specified procedures.

2) Remove the batteries from the battery compartments.

3) Clean the sights and all accessories.

4) Place all components into the storage case.

6. TROUBLESHOOTING

Common problems that may occur with your Spear or the detection and viewing tests, as well as actions you can take to correct them, are listed in the Troubleshooting Guide table. **This table does not list all of the malfunctions that may occur with your device.** If you experience a malfunction that is **not** listed on this table, please contact Armasight or your Spear retailer.

NOTE:
Before you use this table, be sure that you have performed all normal operational safety, care and handling checks and procedures.

Troubleshooting Guide

PROBLEM	POSSIBLE CAUSE	ACTION
The sight does not switch on	Inspect for a missing, defective or improperly installed battery.	Replace the battery or install it properly.
If these actions fail, submit the device for unit level maintenance.		
Poor image quality	Verify that the objective lens and eyepiece are focused.	Focus the ocular and lens.
	Check if the lenses are greasy, fogged or dirty.	Thoroughly clean the surfaces of each lens.
If the problem persists, contact your service center.		
Light is visible through the eyecup	Check the exit pupil distance value.	Press the eyecup to your face.
	Check the eyepiece resilience.	If the eyecup is defective, contact your service center.
Diopter adjustment cannot be performed	Check to see if the diopter adjustment ring is deformed or broken.	If the diopter adjustment ring is damaged, contact your service center.
IR illuminator does not switch on	With the sight on, turn the IR illuminator on in dark area. Visually estimate if the observed scene is lighted.	If the IR illuminator does not turn on, contact your service center.

PRODUCT WARRANTY REGISTRATION CARD

PRODUCT INFORMATION

Product Name _____ Purchased From _____

Purchase Date _____ Product Serial # _____

CUSTOMER INFORMATION

Name _____

Address _____

City _____ Country _____ Zip _____

Day Phone # _____ Home Phone # _____

E-mail address _____

Customer Signature Required

7. WARRANTY INFORMATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of two (2) years from the date of purchase. In the event that a defect covered by the below warranty occurs during the applicable period stated above, Armasight, at its discretion, will either repair or replace the product; such action on the part of Armasight shall be the full extent of Armasight's liability, and the Customer's sole and exclusive reparation. This warranty does not cover a product if it has (a) been used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than Armasight without prior written consent of Armasight; (d) special order or "close-out" merchandise or merchandise sold "as-is" by either Armasight or the Armasight dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of Armasight. Armasight shall not be responsible for any defects or damage that in Armasight's view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. CUSTOMER IS HEREBY NOTIFIED THAT OPERATION OF THE EQUIPMENT DURING DAYLIGHT HOURS OR UNDER ANY EXCESSIVE LIGHT CONDITIONS MAY PERMANENTLY DAMAGE THE INTERNAL COMPONENTS OF THE UNIT AND SAID DAMAGE WILL NOT BE COVERED UNDER THIS WARRANTY. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the customer notifies Armasight at the address noted below within the applicable warranty period.

The customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

LIMITATION OF LIABILITY

Armasight will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. Armasight's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by Armasight to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside Armasight and the Customer; Armasight's obligations under this Agreement extend solely to the Customer. Armasight's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to Armasight by the customer or customer's dealer. Armasight shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability or any other theory of liability.

PRODUCT WARRANTY REGISTRATION

In order to validate the warranty on your product, Armasight must receive a completed Product Warranty Registration Card for each unit, or the Customer can complete a warranty registration on our website, at www.armasight.com. Please complete the included form and immediately mail it to our Service Center:

Armasight Inc.
815 Dubuque Avenue
South San Francisco
CA 94080
United States of America.

OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the Armasight service department via email. Send any requests to service@armasight.com to receive a Return Merchandise Authorization number (RMA). When returning any device, please take in the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to Armasight Corporation's service center at the address listed above. All merchandise must be fully insured with the correct postage; Armasight will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the Customer's Name, a Return Address, reason for the return, Contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days. The End-user/ Customer is responsible for postage to Armasight for warranty service. Armasight will cover return postage/ shipping after warranty repair to the End-user/ Customer only if the product is covered by the aforementioned warranty. Armasight will return the product after warranty service by domestic UPS Ground service and/ or domestic mail. Should any other requested, required or international shipping methods be necessary, the postage/ shipping fee will be the responsibility of the End-user/ Customer.

Armasight Inc.

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Intl Phone/Fax: (650)492-7755

info@armasight.com

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